420750

DRAFT SITE INSPECTION PRIORITIZATION REPORT

FORMER TRW DOT DIVISION (a.k.a. UCINITE CORPORATION)

NEWTON, MASSACHUSETTS

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY NEW ENGLAND
Office of Site Remediation and Restoration
Boston, MA

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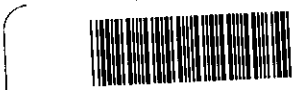

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

Draft Site Inspection Prioritization Report **CERCLIS No. MAD001032671**
FORMER TRW DOT DIVISION (UCINITE CORPORATION) **TDD No. 9704-10-CSX**
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INTRODUCTION

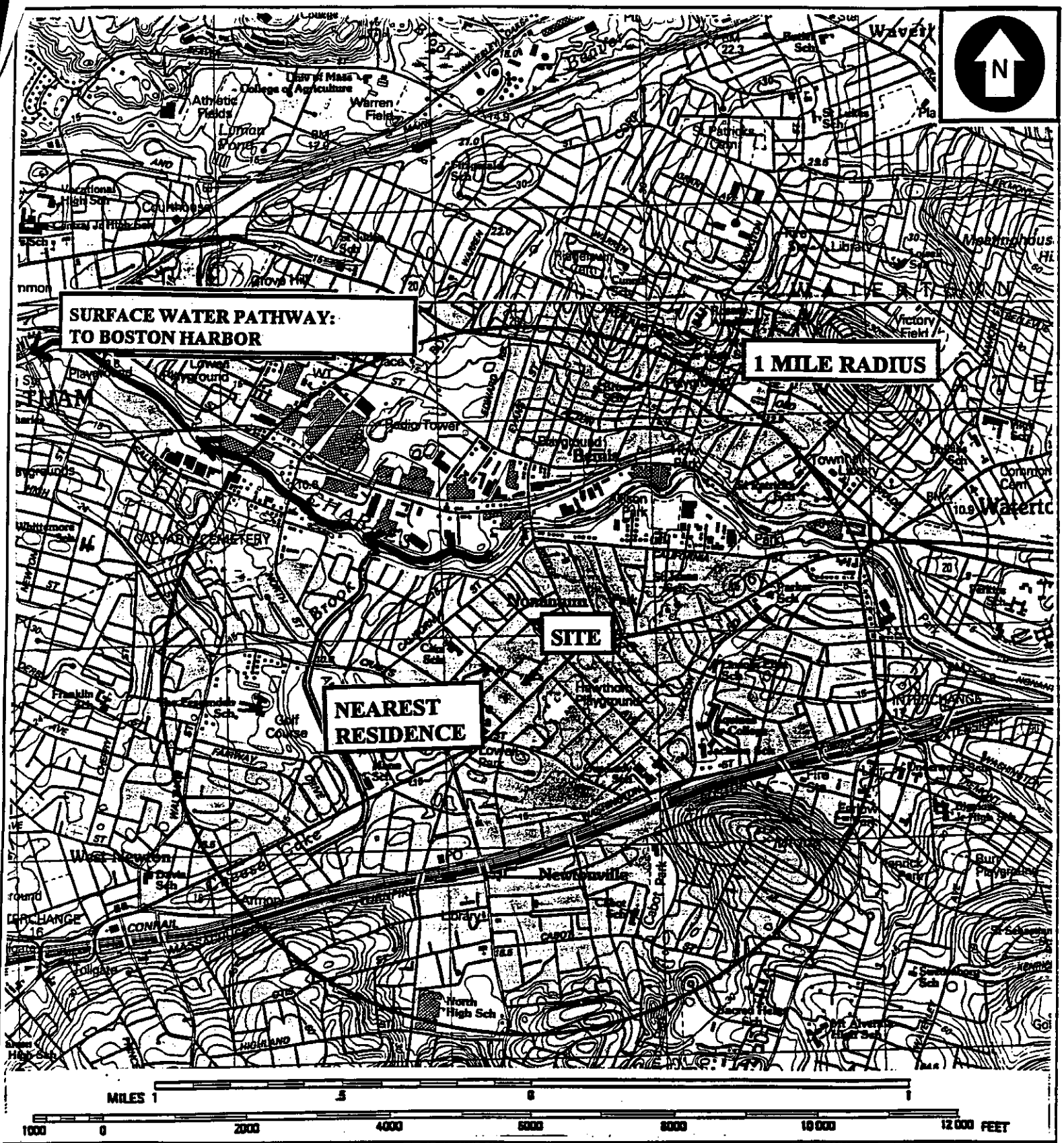
Stone & Webster Environmental Technology & Services (Stone & Webster) was requested by the U.S. Environmental Protection Agency New England (EPA-New England) Office of Site Remediation and Restoration to perform a Site Inspection Prioritization (SIP) of the Former TRW DOT Division (TRW DOT) in Newton, Massachusetts. All tasks were conducted in accordance with the New England Corps of Engineers Contract No. DACW33-94-D-0007, which was issued to Stone & Webster on June 24, 1994, and Delivery Order 0030 issued April 15,1997. TRC Companies, Inc. performed a Preliminary Assessment (PA) of this property in March 1993, and a Site Inspection (SI) was conducted by the Massachusetts Department of Environmental Quality Engineering (MADEQE) for the EPA in August, 1984. Updated information since the last EPA activity encountered during the SIP process is included in this report. Relevant text from the Preliminary Assessment report is presented in this report in italics.

Background information used in the generation of this report was obtained through file searches conducted at EPA Wilmington, EPA Canal Street, the Massachusetts Department of Environmental Protection (MADEP) and the Newton Town Hall. Conversations were held with Newton Department of Public Works officials, telephone interviews were held with water departments in the surrounding communities. Information was obtained through computer database searches, and conversations with other Federal, State, and local agencies. Additional information was obtained during Stone & Webster's onsite reconnaissance on August 11, 1997.

This package follows guidelines developed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. However, these documents do not necessarily fulfill the requirements of other EPA regulations, such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, and local regulations. A SIP is intended to provide a preliminary screening of sites to facilitate EPA's assignment of site priorities. It is a limited effort, and is not intended to supersede more detailed investigations.

SITE DESCRIPTION

The Former TRW DOT Division (also known as United-Carr, Inc. or the Ucinite Corporation/DOT Corporation) *is located at 320 Nevada Street, Newton, Massachusetts, Middlesex County, at* 42°21' 33" latitude and 71°12' 30" longitude.[1] *It is part of a larger property designated as 459 Watertown Street.* The site is situated on Lots 9, 10, and 10A of the Town's Assessor's Map 17 NE, Block 8. *The Ucinite/DOT Corporation property is in a mixed residential/industrial neighborhood in the Nonantum section of Newton.* A portion of the Boston South USGS 7.5 minute topographic map showing a 1-mile radius from the site is included as Figure 1. A drafted sketch showing site layout, source areas, and features on and around the site is included as Figure 2.

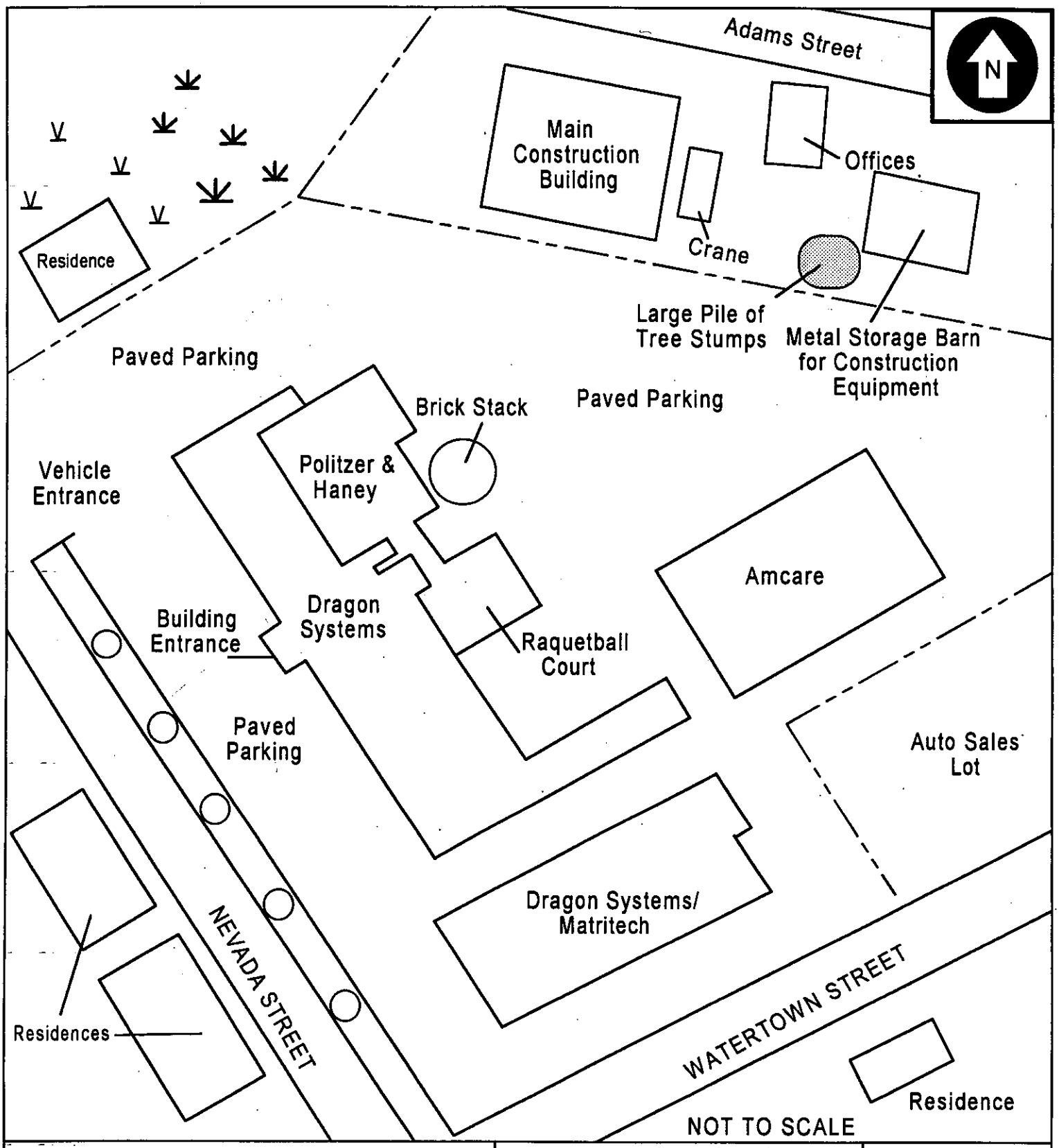


BASE MAP IS A PORTION OF BOSTON SOUTH (1987) AND BOSTON NORTH (1985) MASSACHUSETTS 7.5 MINUTE SERIES USGS TOPOGRAPHIC MAPS.

Stone & Webster
Environmental Technology
and Services
Boston, Massachusetts

Date: 7/10/97
CERCLIS No.:
MAD 001032671

Site Location Map
FORMER TRW DOT DIVISION
Figure 1



Storm Drain
Fence
Grass
Wetland

MAP IS ADAPTED FROM TRC COMPANIES, INC. PRELIMINARY ASSESSMENT, MARCH 1993

Stone & Webster Environmental Technology and Services Boston, Massachusetts

Date: 8/11/97
CERCLIS No.: MAD 001032671

Site Location Map
FORMER TRW DOT DIVISION SITE
Figure 2

The site is currently owned by Joseph Biotti of 1 Nevada Street Realty Trust. Currently, the site is occupied by four companies; Dragon Systems, a computer software company, Politzer and Haney, also a computer software company, Matritech, manufacturer of test kits for cancer diagnostics, and Amcare Medical Services, a home service medical care provider.[4] Past and present activities at the former TRW DOT Division are described in the following Operational History section.

The site consists of a five-*story brick mill building, a one-story* warehouse *building* (which later became known as the Plastic Moldings Building as shown on Figure 2), *and a two-story* assembly *building* all *surrounded by a paved, landscaped parking lot.* The entire site is paved, with the exception of a row of trees along Nevada Street.[4]

Approximately 50 feet off site and *north of the mill building is a wetland approximately 5 acres in size. The wetland is what remains of Silver Lake, a small pond that has been mostly filled. Surface water runoff at the property apparently runs behind the mill building (north) and into the remnant of Silver Lake. The wetland appears to be internally drained. Surface water runoff from the property is also channeled into two storm drains immediately to the northeast of the mill building, which ultimately empty into the Charles River, 2,000 feet northwest of the property.*

Land in the vicinity of 320 Nevada Street is heavily developed. The site is surrounded by residential properties to the southeast, across Watertown Street, to the southwest, across Nevada Street, and to the northwest, abutting the site. The site is bordered by J. Biotti and Sons Construction and the Paolini Corporation to the northeast.[4] *The nearest residence is 50 feet west of the mill building, across a driveway.*

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

Operational History

There are three buildings on the property. The large, five story brick building was built in the mid-1860s, with two wings added to the original structure in the 1880s and in 1917, respectively. This building, referred to as the "mill building," was used by the Silver Lake Cordage Company to manufacture solid braided cord, sash ropes, clotheslines and trolley and bell pulls. In an area of the mill building, also referred to as the electroplating room, the Silver Lake Cordage Company had a large, coal-powered fly wheel which dragged hemp rope through the then-existing Silver Lake. According to the Massachusetts Historical Commission Report, the Silver Lake Cordage Company ceased operations on the property in approximately 1928.[5]

United-Carr, Inc. (which was acquired by TRW in 1968) began renting space in the mill building in approximately 1938. Space was shared with the Ark-less Switch Company. United-Carr purchased the building in 1947.[5]

Major filling of Silver Lake occurred in 1952 to make room for the one-story concrete block building, referred to as the "plastic moldings building," for parking, and for use by other adjacent property owners. Permits were sought and obtained from the City of Newton for this work. There is no information available concerning the quality of fill material used. However, a previous plant manager

suggested that cinders from an incinerator on site may be part of the fill.[3] (Note: additional information regarding the incinerator was unavailable during preparation of this report.) The former plastic moldings building was built in the early fifties in two sections. The building originally housed a plastic molding operation and offices. Later it served as an office and warehouse. The first section included trenches for air, water and power services for the plastic molding machines. The second section added floor space and enclosed a deep process water well. Water from the well was used to cool the molding machines and was then recycled.[5]

The two-story building on the property, referred to as the "assembly building " or "telephone building" (which later became known as the assembly/warehouse building, as shown on Figure 2), was acquired by United-Carr in 1960. The building had formerly served as a telephone company garage. United-Carr added the second story in the mid-fifties.[5]

United-Carr, then the Fasteners Division of TRW, conducted manufacturing operations on the property from 1938 until 1983, when the property was donated to the TRW Foundation, an Ohio non-profit corporation. The manufacturing operations all related to specialty fasteners of various types or to the assembly of electromechanical devices. From 1980 until 1983, the only manufacturing operations conducted on the property related to the machining and assembling of fastener attaching machines.[5]

Operations which were conducted at various times by United-Carr included the following: plating of cadmium, copper, silver, nickel and zinc, degreasing, painting, wire stripping, soldering, metal stamping, metal machining, thermoset molding, thermo-plastic molding and the assembly of metal and plastic components including Bakelite, which is a phenolic-based material. All plating and degreasing activities terminated in 1978.[5]

Inside the mill building there was a brick cistern or well. This cistern had not been used for many years and its original purpose is unclear. For many years the cistern went undetected by TRW personnel because it was in a small room with no entrance. The cistern was discovered in 1982.[5]

Currently four companies occupy the site. (Note: It is unknown when the three of the four companies took occupation of the site. Matritech began occupying the site in December, 1995). Floors two through five of the former mill building are occupied by Dragon Systems, a computer software company. Dragon Systems employs approximately 200 people.[4]

The former electroplating room, which was located in the first floor of the mill building, is occupied by Politzer and Haney, also a computer software company. Politzer and Haney employ approximately 60 people.[4]

The first floor of the former assembly/warehouse building is also occupied by Dragon Systems. The second floor of the building has been occupied by Matritech, a company that manufactures test kits for cancer diagnostics, since December, 1995. The company utilizes hazardous chemicals in the manufacturing process including 2-Methylbutane, 2-Propanol, acetic acid, acetone, alcohol, ammonium hydroxide, ammonium sulfate, benzene, E.D.T.A., ethanol, glycerol, glycine, hepes, hydrochloric acid, imidazole, lauryl sulfate, methanol, phosphoric acid, potassium chloride, polyvinyl

alcohol, sodium hydroxide, sorbitol, sucrose, sulfuric acid, urea, and xylene.[4] Prior to Matritech, a company called Hygea Science leased the second floor of the former assembly/warehouse building. Hygea manufactured medical test kits and utilized a great deal of mercury. Matritech had 22 laboratory sinks and one neutralization tank decontaminated by Zecco, Inc. in April, 1996.[6]

The former plastic moldings building is currently occupied by Amcare Medical Services, Inc., a home service medical care provider. Amcare also houses a retail pharmacy on site. Approximately 60 people are employed by Amcare.[4]

Regulatory and Sampling History

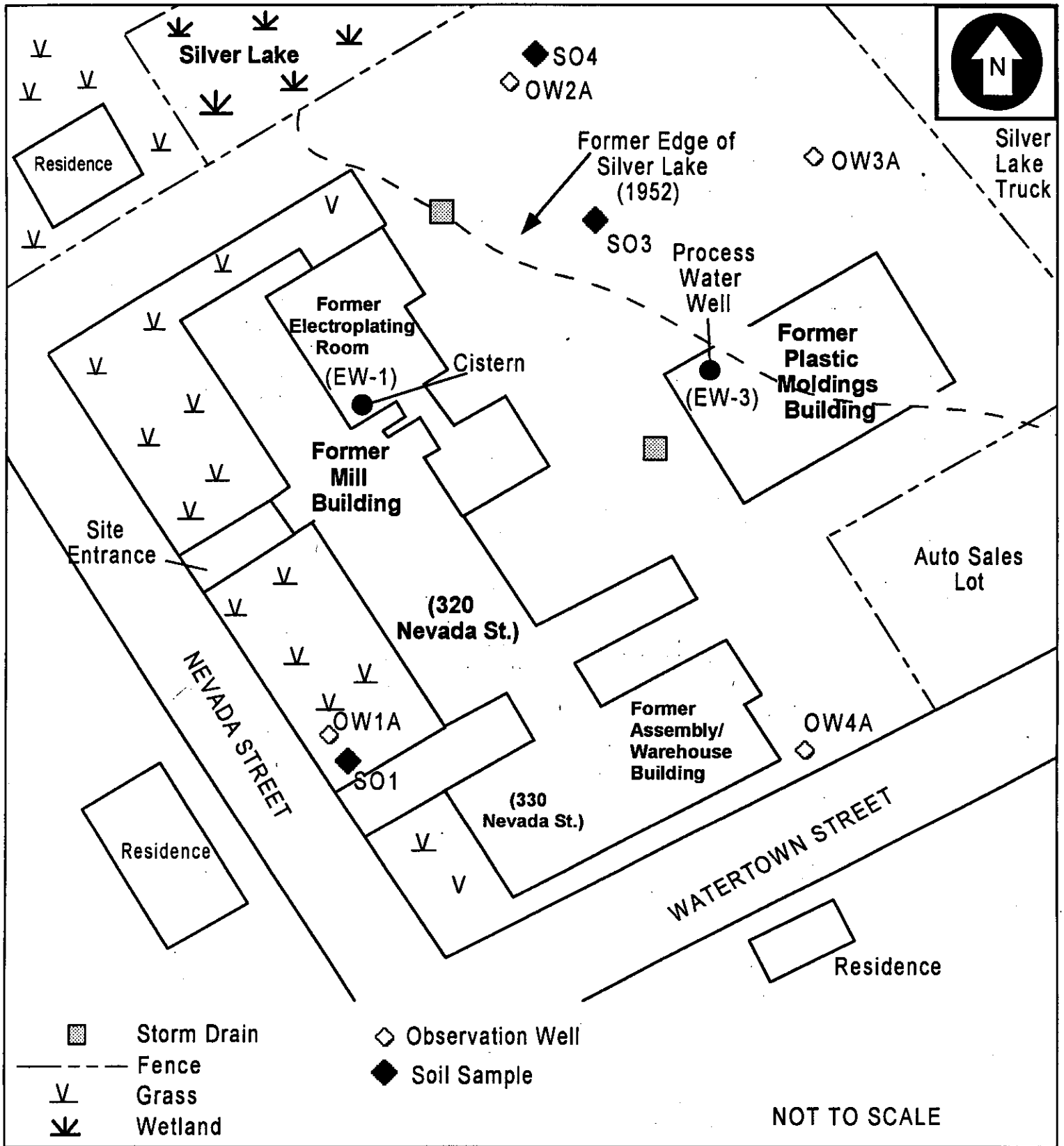
The following describes inspections and activities which have occurred at the property.

In November, 1982 EG&G Environmental Consultants (EG&G) of Waltham, MA performed an environmental site assessment of the facility for the purpose of identifying the presence and extent of on-site contamination. The cistern in the electroplating room of the mill building was discovered by EG&G at this time. *EG&G installed monitoring wells as part of the assessment.* (Note: Details of these monitoring wells were unavailable during preparation for this report). *A 150-foot deep process water bedrock well to supply water to cool machinery is located in their plastics molding building. EG&G collected soil boring and groundwater samples from the monitoring wells and from the process water well.* It is unknown what these samples were analyzed for.

Upon conclusion of EG&G's site assessment, findings indicated that the process water well, EW-3, contained 2,000 ppb t-1,2-dichloroethylene (t-1,2-DCE). Water samples at four observation wells produced unknown amounts of cyanide, trichloroethylene (TCE), t-1,2-DCE, cadmium, zinc, chromium, silver, nickel, and beryllium. On-site soil samples (S01, S03, and S04), collected during installation of the observation wells and shown on Figure 3, indicated levels of vinyl chloride and methylene chloride, as well as the contaminants identified in the wells.[3] The depth at which these samples were collected is unknown. *The results of this investigation are summarized in the TRW DOT Preliminary Assessment dated July 10, 1984.* This report was unavailable during preparation of this report.

In November, 1982 under the supervision of EG&G, Pollution Control Unlimited, Inc. of New York pumped 700 gallons of water and an unknown quantity of sludge from the cistern and removed it from the site. Analysis of water samples from the cistern detected t-1,2-DCE at 2,000 parts per billion (ppb), as well as cyanide, TCE, vinyl chloride, methylene chloride, cadmium, zinc, chromium, copper, silver, nickel, and beryllium at unknown concentrations. (Note: The parameters for which these samples were analyzed are unknown). Evidence indicates that the cistern was used to dispose of plating wastes and possibly other unknown materials.[3] *After EG&G data analyses determined the presence of groundwater contamination following this work, the MADEQE was notified and the entire 459 Watertown Street property was entered on the CERCLIS as TRW DOT Division on January 1, 1983 (CERCLIS #: MAD001032671).*

After receiving the November, 1982 EG&G Site Assessment, the MADEQE began monitoring site remediation and removal of contaminated material *at the former Ucinite property. From March*



MAP IS ADAPTED FROM TRC COMPANIES, INC. PRELIMINARY ASSESSMENT, MARCH 1993

Stone & Webster Environmental Technology and Services Boston, Massachusetts

Date: 6/4/97
CERCLIS No.: MAD 001032671

Sample Locations
FORMER TRW DOT SITE
Figure 3

through May 1983, under the supervision of Camp, Dresser and McKee (CDM) of Boston, MA, CECOS International of New York, a waste disposal company, tested the surfaces of the electroplating room and removed asbestos- and cyanide-contaminated concrete from the room. The origin of the cyanide is thought to be from the formation of cyanide gas from the acidic plating baths, or from splashes from these same baths.[3] All asbestos pipe insulation, together with contaminated duct work and miscellaneous piping, was removed and placed in a secure container.[5] *CECOS also cleaned and removed an empty 1,500-gallon above ground trichloroethylene(TCE) tank located outside the rear of the mill building. The asbestos and the tank were removed to a CECOS secure storage facility in Niagara Falls, New York in June 1983.*

Questions not addressed in the November, 1982 EG&G report led to further investigation in June, 1984 by CDM.[3] The field program consisted of three primary elements: groundwater sampling, wipe testing of wall in the former plating room, and geophysical investigation.[8]

The groundwater sampling consisted of collecting samples from four existing monitoring wells (OW-1A, 2A, 3A, and 4A. A fifth well, OW-2C was abandoned); the former cistern (EW-1); and a former process water well (EW-3). The water levels observed in these wells showed that there was a perched water table, most likely as a result of the filling of Silver Lake, in the north and northeastern section of the site. The direction of flow in the aquifer immediately below the perched layer and nearest the ground surface under the remainder of the site was not readily apparent due to the very small magnitude of the flow gradient. This conclusion concurs with that of EG&G during their investigation.[8]

CDM sampled all the wells and the cistern in June 1984. Compounds detected in the monitoring wells include: arsenic, cadmium, chromium, copper, lead, zinc, benzene and TCE. Compounds detected in the cistern included cadmium, chromium, copper, lead, silver, zinc, t-1,2-DCE and TCE.[2] The process water bedrock well was found to contain t-1,2 DCE. Laboratory results are discussed in detail in the Groundwater Pathway section.

During the course of the CDM investigation of the former mill building, CDM personnel collected three wipe samples from the walls and one sample of the scrap of wall material from the former plating room that had been sandblasted by CECOS. The wipe samples were collected using a sodium hydroxide solution over a six inch square area. These samples were analyzed for cyanide and each tested positively. This is merely indicative that cyanide is present in the areas investigated.[8]

On July 2, 1984, CDM hired Weston Geophysical, Inc. (Weston) *to conduct a ground-penetrating radar survey. Weston's investigation determined the margin of Silver Lake and identified a water table located at a depth of five feet at the northwest end of the property. The investigation also determined the locations of filled areas and of point sources in the northwest corner of the property. These point sources were consistent with the disposal of incinerations cinders.* (Note: this is discussed in the Waste Characteristics subsection on page 10.) *The point sources were excavated on September 11, 1984 under the supervision of the MADEQE but no evidence of buried waste materials was found.*

The MADEQE completed a Preliminary Assessment of the property on July 10, 1984 and a Site

Inspection on August 17, 1984. Upon the MADEQE's inspection of the facility in August, 1984, two electroplating rooms were identified in the first floor of the mill building. Each of these plating rooms had a drainage manhole in the floor containing discolored liquid and sludge. The concrete floor was rutted around these manholes possibly indicating that acidic plating liquids had drained into them.[3]

On October 22, 1984, Empro Services, Inc. removed sludge from the drains in the electroplating room, filled the drains with peastone and sealed them. The sludge was taken to SCA Services in Braintree, MA. On October 24, 1984 the cistern was filled with peastone and sealed. During the week of October 22, 1984, the electroplating room was again cleaned, treated, and tested for cyanide. The surfaces tested negative for cyanide contamination.

The Commonwealth of Massachusetts determined that all its requirements for site remediation and waste removal had been met. On January 14, 1985, "No Further Action" status was granted for the site under Chapter 21E of the Massachusetts General Laws.

Information provided by an anonymous informant was forwarded to the Superfund Site Assessment Program in a September 4, 1991 memorandum from William Hanscom, EPA Inspector, to Nancy Smith, EPA Site Assessment Manager. According to the informant, the building located at 320 Nevada Street was owned and operated by the Ucinite/DOT Corporation during the 1940s-1950s. During this time, the company disposed of drums and liquid hazardous wastes in Silver Lake. The informant alleged that the Raytheon Corporation and the Hartz and Mason Corporation also used Silver Lake for hazardous waste disposal. The informant claims that he/she used to fill cans with "white gooey foam" which were ignited and used as "flame throwers." According to this informant, the 320 Nevada Street property (mill building) was later divided into several parcels and sold to Pat Franci, the Belli Brothers, and the Angelo Paolini Corporation. Drums of waste were said to have been buried by these new owners when Silver Lake was filled.

On the basis of the above information, the 320 Nevada Street property was entered onto CERCLIS on January 8, 1992 as a potential hazardous waste disposal site. During file review for the Preliminary Assessment for 320 Nevada Street conducted by TRC Companies, Inc., *it was discovered that the 320 Nevada Street property is completely within the 459 Watertown Street property.* (Note: The 459 Watertown Street property had already been entered onto the CERCLIS list on January 1, 1983 as MAD001032671. A second CERCLIS number was not mentioned in any of the reference literature used in preparation of this report.)

TRC's file review of the 320 Nevada Street property indicated that the 320 Nevada Street/459 Watertown Street property was owned by TRW until 1984. On September 18, 1984, the entire 459 Watertown Street property (including 320 and 330 Nevada Street and the plastics molding building) was sold to Mr. Joseph A. Biotti. None of the individuals mentioned above (Franci, Belli, or Paolini) own or have ever owned any part of this property. In addition, the portion of Silver Lake on which the property fronted was filled in 1952. It is not known what wastes may have been discharged to Silver Lake before 1952, however, no filling of the lake occurred at 459 Watertown Street after its resale in 1984.

There are five CERCLIS sites and 71 RCRA notifiers within one mile of the site. [7] *Review of the*

businesses in the vicinity of 459 Watertown Street indicates that one RCRA notifier, Paolini Corporation (MAD019529759), is located at 103 Rear Adams Street, Newton. The Silver Lake area is a large open lot bordered by Watertown, Nevada, Linwood, and Adams Street. The Paolini Corporation, on Adams Street, is on the opposite side of Silver Lake from the Ucinite/DOT Corporation property on Nevada Street. It may be that the informant was referring to the Adams Street area when he/she discussed recent waste disposal. In addition, another company the informant mentioned, the Raytheon Corporation, owned property one block northeast of Adams Street, on Bridge Street. The waste disposal practices identified by the informant may have occurred on that side of Silver Lake, not at the 320 Nevada Street/Nevada Street property.

Waste Characteristics

Prior to 1938 the site was a rope manufacturing plant, but records of any waste generation during this time are not available. From 1938 to 1983 TRW's activities consisted of electroplating and other manufacturing processes. Electroplating operations involved the use of zinc, copper, cadmium, and other metals. Plastic molding, performed in the one-story building, required cooling water for 30 machines that was derived from an on-site bedrock well. The plastic molding process did not generate hazardous wastes.[3]

A large stack exists on-site servicing an old incinerator. Mr. John Searle, the plant manager from 1966 to 1972, reports that the incinerator had not been used since his arrival at TRW in 1966 and did not know when it was last used. He did, however, suggest that cinders generated from the past use of the incinerator might be part of the fill material that was found on site. [3] (Note: as previously mentioned, these cinders were consistent with point sources detected by Weston's geophysical survey. The point sources were excavated on September 11, 1984.)

Hazardous wastes are currently generated on site by Matritech. Matritech has been designated a very small quantity generator under MADEP guidelines. On July 10, 1997 the most recent waste shipment occurred removing corrosive liquids, sulfuric acid, hydrochloric acid, citric acid, acetone, silver nitrate, sodium hydroxide, mercury, zinc, methanol, and potassium permanganate. Matritech generates 6 to 7 gallons of waste quarterly. Hazardous wastes are stored in nonflammable cabinets until they are removed by Laidlaw Environmental.[4] In addition, Matritech also stores a small number of plastic containers of unused acid and base in the neutralization tank room. The containers are approximately one gallon each.[4]

Dragon Systems and Politzer and Haney do not generate hazardous waste. The only chemicals in their possessions are cleaning fluids and toner for the computer printers and photocopiers.[4]

Amcare does not generate hazardous waste but rather arranges for biological waste disposal (i.e., sharps) from patients homes.[4]

Several possible sources of contamination that were identified during file review and on the August 1997 site reconnaissance include:

- cinders/ash in fill

- drainage manholes in electroplating rooms
- cistern
- bedrock process water well
- discharge from storm drains to Charles River
- 1,500-gallon aboveground TCE tank

Description of each source:

Source 1 - Cinders/Ash

A large stack exists on site servicing an old incinerator. The MADEQE reported in 1984 that it was believed that the incinerator had not been used since prior to 1966. The MADEQE also reported that the Plant Manager suggested that cinders from the incinerator may be part of the fill in Silver Lake.[3] Ash is known to contain metals, and since metals were found on site, cinders/ash will be considered a potential source of contamination. This source was available to the groundwater and surface water pathway.

Source 2 - Drainage manholes in electroplating rooms

Upon MADEQE's inspection of the facility in 1984, two electroplating rooms were identified in the first floor of the mill building. Each of these plating rooms had a drainage manhole in the floor containing discolored liquid and sludge. The MADEQE noted that the concrete floor was rutted around these manholes possibly indicating that acidic plating liquids and cyanide had drained into them. On October 22, 1984, Empro Services, Inc. removed sludge from the manholes in the electroplating room, filled them with peastone and sealed them. The sludge was taken to SCA Services in Braintree, MA.(Note: it is assumed that the liquid was removed and taken to SCA Services as well.) Although sampling of the surfaces in the electroplating room after the sludge/liquid was removed indicated that cyanide was no longer present, samples were not analyzed for metals.[3] For this reason, the manholes will be considered a potential source of contamination. It is possible for these manholes to have leaked contaminated liquid to the soil surrounding them via cracks in the concrete. The conditions of the manholes are unknown. This source is available to the groundwater and soil exposure pathway.

Source 3 - Cistern

Source 3 is a brick cistern/well located in the mill building. Analysis of water samples collected from the cistern by EG&G in November, 1982 detected t-1,2-DCE at 2,000 ppb, as well as cyanide, TCE, vinyl chloride, methylene chloride, cadmium, zinc, chromium, copper, silver, nickel, and beryllium at unknown concentrations. Subsequently, under the supervision of EG&G, Pollution Control Unlimited of New York pumped 700 gallons of water and an unknown quantity of sludge from the

cistern and disposed of it off site. In October 1984, the cistern was filled with peastone and sealed. [2] However, sampling did not occur after the water and sludge were removed to document that all contamination had been removed. Therefore, the cistern will be considered further as a source. This source was available to the groundwater and surface water.

Source 4 - Bedrock Process Water Well

Source 4 is a 150-foot bedrock well located in the former plastics moldings building. Water from the well was used to cool the molding machines and it was then recycled back into the well. In November, 1982, EG&G collected groundwater samples from the process water well. The contaminants detected in groundwater included cadmium, nickel, chromium, zinc, silver, lead, beryllium, copper, cyanide, mercury, and phenolics, all at unknown concentrations.[2] It is unknown whether or not the process water well was sealed. No evidence of the well was noted on the 1997 Stone & Webster site reconnaissance and the building in which the well was located has been completely renovated. However, since potentially contaminated water was recycled back into the well, therefore allowing for availability to the groundwater pathway, it will be considered further as a source.

Source 5 - Discharge from storm drains to the Charles River

Two storm drains in the parking lot to the rear of the mill building discharge to the Charles River. The Charles River is approximately 2,000 feet to the northwest of the mill building. Since it was not be proven that the TRW DOT was the only facility along this 2,000 foot pathway to discharge to the Charles River, discharge from storm drains to the Charles River will not be considered further as a source.

Source 6 - 1,500-gallon aboveground TCE tank

Source 5 is a 1,500-gallon above ground storage tank used to store TCE. The tank was located outside the rear of the Mill Building. There is no evidence of spills or leakage associated with this tank. The tank was removed in June, 1983 by CECOS International of New York [2] and will not be considered further as a source.

Other potential sources of contamination within one mile of the site including CERCLIS, RCRA, and NPL sites are presented in Attachment A.

Table 2 summarizes the hazardous waste quantity for the TRW DOT site.

Table 2
Hazardous Waste Quantity for
the TRW DOT Site

Substance	Quantity or Volume/Area	Years of Use/ Storage	Years of Disposal	Source Area
Antimony	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Arsenic	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Beryllium	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Cadmium	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Copper	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Lead	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Mercury	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Nickel	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Selenium	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Silver	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Thallium	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Zinc	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Benzene	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
t-1,2-Dichloroethylene	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
t-1,3-Dichloropropane	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Toluene	Throughout the site	1938 - 1978	1938 - 1978	Historical Operations
Trichloroethylene	Throughout the site	? - 1983	? - 1983	Tank

[18]

Table 3 presents a summary of analytical results for all sampling efforts that were conducted at the Former TRW DOT Division.

Table 3
Summary of Groundwater Analytical Results for the Former TRW DOT Site
June, 1984

	OW-01	OW-2	OW-2B (DUP OF OW-2C)	OW-2C (ABANDONED)	OW-3	OW-4	EW-1	EW-3
METALS (mg/L)								
Antimony	<0.05	<0.05	0.08	0.08	<0.05	<0.05	<0.05	<0.05
Arsenic	<0.025	0.028	0.039	<0.025	0.055	<0.025	<0.025	<0.025
Beryllium	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Cadmium	<0.05	<0.05	0.15	0.17	<0.05	<0.05	9	<0.05
Chromium	<0.1	2.4	0.5	0.5	<0.1	<0.1	4.5	<0.1
Copper	<0.1	1.1	0.4	0.5	<0.1	<0.1	1.3	<0.1
Lead	0.067	0.14	0.22	0.22	0.13	0.034	0.45	<0.01
Mercury	<0.001	<0.001	0.005	<0.001	<0.001	0.003	<0.001	<0.001
Nickel	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Selenium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Silver	<0.001	<0.001	0.032	0.38	<0.001	<0.001	0.08	<0.001
Thallium	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Zinc	20	8.1	9.3	10	17	23	7.6	<0.05
Cyanide	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.36	<0.01
VOCs (µg/L)								
Chloromethane	<5	<5	<5	<5	<5	<5	<5	<5
Bromomethane	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl Chloride	<5	<5	<5	<5	<5	<5	<5	<5
Chloroethane	<5	<5	<5	<5	<5	<5	<5	<5
Methylene Chloride	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroflouromethane	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethylene	<5	<5	<5	<5	<5	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5

	OW-01	OW-2	OW-2B (DUP OF OW-2C)	OW-2C (ABANDONED)	OW-3	OW-4	EW-1	EW-3
t-1,2-Dichloroethylene	<5	<5	<5	<5	<5	<5	9	<5
Chloroform	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5	<5	<5	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5
Carbon Tetrachloride	<5	<5	<5	<5	<5	<5	<5	<5
Bromodichloromethane	<5	<5	<5	<5	<5	<5	<5	<5
1,2-Dichloropropane	<5	<5	<5	<5	<5	<5	<5	<5
t-1,3-Dichloropropane	<5	<5	<5	<5	<5	20	<5	<5
Trichloroethylene	<5	<5	<5	<5	<5	<5	69	<5
Dibromochloromethane	<5	<5	<5	<5	<5	<5	<5	<5
Cis-1,3-Dichloropropene	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5	<5	<5	<5	<5	<5
Benzene	<5	<5	7	7	<5	<5	<5	<5
2-Chloroethylvinylether	<5	<5	<5	<5	<5	<5	<5	<5
Bromoform	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethylene	<5	<5	<5	<5	<5	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5	<5	<5	<5	<5	<5
Toluene	<5	<5	<5	<5	<5	<5	<5	<5
Chlorobenzene	<5	<5	<5	<5	<5	<5	<5	<5
Ethylbenzene	<5	<5	<5	<5	<5	<5	<5	<5
D-6 Benzene	25	18	25	25	36	25	26	24
D-8 Toluene	25	23	24	24	25	24	24	23

GROUNDWATER PATHWAY

Materials beneath the property consist of sand and gravel fill to a depth of 5 feet, underlain by the peat bottom of what was Silver Lake. Bedrock beneath the property consists of the Roxbury Conglomerate. The entire area is within the Boston Basin, a structural depression bounded to the west and southwest by the Bloody Bluff Fault Zone.

The property is 5.1 acres which gradually slope to the north-northeast. At an average elevation of 47.6 feet above mean sea level, the property is located in Zone C (not prone to flooding) as defined on the Federal Emergency Management Agency's Flood Insurance Rate Map. [19] *Groundwater is found at an average depth of 5 feet across the property. Groundwater flow is difficult to determine, although it is believed to flow north, toward Silver Lake ad the Charles River. A perched water table exists at a depth of 5 feet under the parking lot in the area of the former Silver Lake.*

Annual precipitation for the vicinity of the site in 43.81 inches.[9]

Groundwater Usage

The cities and towns that are within a 4-mile radius of the site are Newton, Waltham, Watertown, Belmont, and Boston. All of these cities obtain their drinking water from Massachusetts Water Resources Authority's supply at the Quabbin Reservoir. There is no population supplied by municipal wells within four miles of the site.[11, 12, 13, 14, 15, 16]

Private wells are listed by Frost Associates as occurring in the 1- to 2-mile radius out to the 3- to 4-mile radius. Frost Associates estimated the population served by private wells by summing the total number of drilled and dug wells within each CENTRACTS block (a Cartesian data management system used by the census bureau) and multiplying this total by the average number of people in each household.[10]

Table 4 lists the populations which receive drinking water from public and private sources located within each of the target distance rings.

Table 4
Estimated Drinking Water Populations Served by Groundwater Sources Within Four Miles of TRW DOT

Radial Distance From TRW DOT (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
0.00 to 0.25	0	0	0
> 0.25 to 0.50	0	0	0
> 0.50 to 1.00	0	0	0
> 1.00 to 2.00	3	0	3
> 2.00 to 3.00	50	0	50
> 3.00 to 4.00	86	0	86
TOTAL	139	0	139

References: [10, 11]

Groundwater Sampling

As previously mentioned in the Regulatory and Sampling History Section, EG&G performed an environmental site assessment of the facility for the purpose of identifying the presence and extent of on-site contamination in November, 1982. *EG&G installed monitoring wells as part of the assessment.* (Note: Details of these monitoring wells were unavailable during preparation for this report). *EG&G collected groundwater samples from the monitoring wells and from the 150-foot deep process water well* located in the former plastics moldings building . It is unknown what these samples were analyzed for.

Limited results were available for the November, 1982 sampling effort. The compound t-1,2-DCE was detected at 2,000 ppb in EW-3, the former process water well. Water samples at four observation wells produced unknown amounts of cyanide, TCE, t-1,2-dichloroethylene (t-1,2-DCE), cadmium, zinc, chromium, silver, nickel, and beryllium. Detailed results of this investigation *are summarized in the TRW DOT Preliminary Assessment dated July 10, 1984.* This report was unavailable during preparation for this report.

In November, 1982 under the supervision of EG&G, Pollution Control Unlimited, Inc. of New York pumped 700 gallons of water and an unknown quantity of sludge from the cistern and removed it from the site. Analysis of water samples from the cistern detected t-1,2-DCE at 2,000 parts per billion (ppb), as well as cyanide, TCE, vinyl chloride, methylene chloride, cadmium, zinc, chromium, copper, silver, nickel, and beryllium at unknown concentrations. (Note: The parameters for which these samples were analyzed are unknown).

CDM conducted groundwater sampling in June, 1984. The groundwater sampling consisted of collecting samples from four existing monitoring wells (OW-1A, 2A, 3A, and 4A. A fifth well, OW-2C, was abandoned); the former cistern (EW-1); and the former process water well (EW-3). The parameters for which these samples were analyzed were not provided in the reference literature for this report.[8]

The water quality data showed some levels marginally in excess of Massachusetts Class I groundwater standards as follows:

Well	Constituents
OW-1A	Lead (0.67 mg/L), zinc (20 mg/L)
OW-2A	Chromium (2.4 mg/L), copper (1.1 mg/L), lead (0.14 mg/L), zinc (8.1 mg/L)
OW-2C	Cadmium (0.17 mg/L), chromium (0.5 mg/L), copper (0.5 mg/L) lead (0.22 mg/L), silver (0.038 mg/L), zinc (10 mg/L)
OW-3A	Arsenic (0.055 mg/L), lead (0.13 mg/L), zinc (17 mg/L)
EW-1	antimony (<0.05 mg/L), arsenic (<0.025 mg/L), beryllium (<0.1 mg/L), cadmium (9 mg/L), chromium (4.5 mg/L), copper (1.3 mg/L), cyanide (0.36 mg/L), lead (0.45 mg/L), silver (0.08 mg/L), thallium (0.08 mg/L), zinc (7.6 mg/L)

Zinc was in excess of standards in all of the monitoring wells and in EW-1. The wells are constructed with galvanized steel riser pipe, of which zinc is a constituent.[8]

The contaminants detected in groundwater from the process water well include cadmium, nickel, chromium, zinc, silver, lead, and beryllium, all at unknown concentrations.[2]

Volatile organic scans were performed for each of the groundwater samples and they showed the water to be high quality in the monitoring wells. Volatile organics detected in groundwater include: benzene (0.007 mg/L in OW-2C), TCE (0.020 mg/L in OW-4A and 0.069 mg/L in EW-1), and t-1,2 DCE (0.007 mg/L in EW-1 and 0.545 mg/L in EW-3).[2]

These results are generally consistent with those of the November, 1982 EG&G study, which found some low levels of volatile organics at the site with a significant level (2,000 ppb) of t-1,2-DCE in EW-3.

No groundwater sampling has occurred at the site since 1984. Additional sampling at the present time is not possible, as all wells onsite have since been paved over.[4]

An observed release of contaminants to the environment has occurred. Actual contamination targets were not documented, however, because the communities in the vicinity of the site do not draw groundwater for drinking water purposes, and no private drinking water wells were sampled.

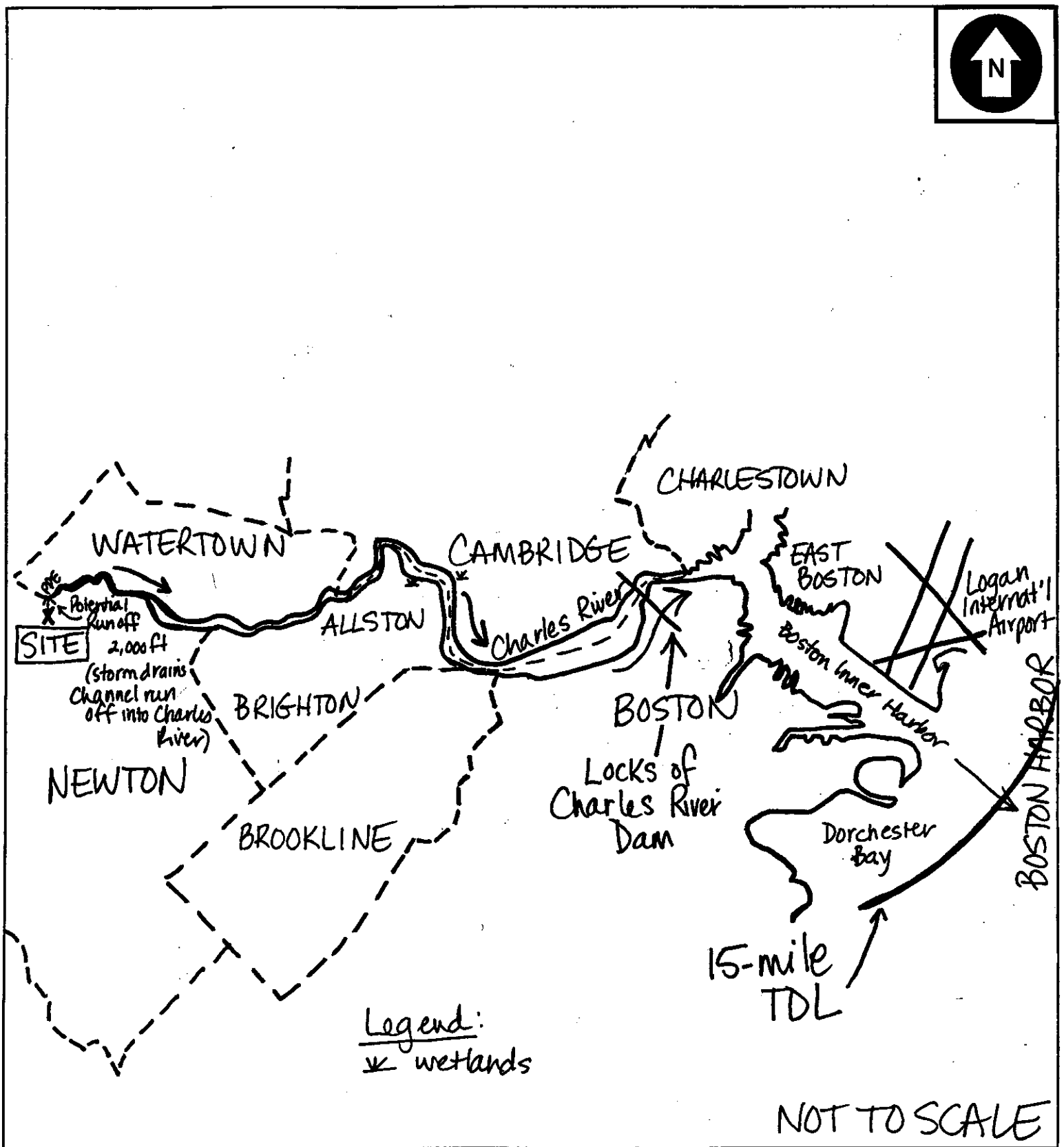
SURFACE WATER PATHWAY

The TRW DOT facility is located on 5.1 acres which gradually slope to the north-northeast. At an average elevation of 47.6 feet above mean sea level, the property is located in Zone C (not prone to flooding) as defined on the Federal Emergency Management Agency's Flood Insurance Rate Map.[19] *Adjacent to the mill building to the northwest is a small wetland. The wetland is what remains of Silver Lake, a small pond that has mostly been filled. The Charles River flows east-northeast of the property. There are two drains in the parking lot northeast behind the mill building which ultimately empty into the Charles River.*

Surface water could be potentially impacted via two separate migration routes: overland flow of stormwater runoff or catch basin discharge. *Surface water runoff at the property apparently runs behind the mill building (north) and into the remnant wetland of Silver Lake. This wetland,* the Probable Point of Entry (PPE) of the overland flow, *is approximately* 50 *feet north of the mill building and is five acres in size. It appears to be internally drained,* therefore the surface water pathway for this migration route ends with the wetland.

Surface water runoff from the property is also channeled into two storm drains immediately to the northeast of the mill building, which ultimately empty into the Charles River. The Charles River, the PPE of the catch basin discharge, is located *2,000 feet northwest of the property site.*

The Charles River flows 14 miles downstream from the property and forms an estuary in Boston Inner Harbor before dispersing into the Outer Harbor at Castle Island.[1] This surface water



BASE MAP IS A PORTION OF BOSTON (1989) MASSACHUSETTS 30 MINUTE SERIES USGS TOPOGRAPHIC MAPS.

Stone & Webster Environmental Technology and Services Boston, Massachusetts

Date: 7/18/97
CERCLIS No.: MAD 001032671

Surface Water Migration Route Sketch
FORMER TRW DOT DIVISION
Figure 4

migration route is shown on Figure 4. There are no public water supply intakes or reservoirs downstream of the property along the Charles River.[11, 12, 13, 14, 15, 16]

The Charles River flows at an average rate of 300 cubic feet per second *and is tidal beyond the locks of the Charles River Dam.*[17] *Although this section of the Charles River is not stocked with fish, fishing is permitted along these sections. There is one wetland located 2.3 miles downstream of the site. It is a 12.8-acre, palustrine, forested island with approximately 500 feet of frontage. There are no threatened or endangered species living within a 4-mile radius of the site or along the Charles River downstream of the property.*

No surface water or sediment sampling has occurred at the site.

Table 5 identifies the water bodies within the in-water segment and the length of reach and flow characteristics of each segment.

Table 5
Water Bodies Within the Surface Water Segment of the TRW DOT Site

Surface Water Body	Descriptor[a]	Length of Reach	Flow Characteristics (cfs)[b]	Length of Wetlands
Charles River	Moderate to large stream	14 miles	Approximately 300 cfs	500 feet
Boston Inner Harbor	Coastal tidal waters	1 mile	NA	0

[1, 2, 17]

[a] Minimal stream. Small to moderate steam. Moderate to large stream. Large stream to river. Very large river. Coastal tidal waters. Shallow ocean zone or Great Lake. Deep ocean zone or Great Lake. Three-mile mixing zone in quiet flowing river.

[b] Cubic feet per second.

SOIL EXPOSURE PATHWAY

The total number of workers on site is 360.[4] The total population within one mile travel distance of the site is approximately 22,133.[10] A residential population is not associated with the site. However, there are residences located to the west, south and east of the facility. *The nearest residential property is 50 feet west of the site.* There are no schools or day care facilities within 200 feet of the site. [1, 2, 7] Endangered species information is not yet available for this site and will be included in future drafts.

Sampling

On-site soil samples were collected throughout the site, as shown on Figure 3, during EG&G's November, 1982 site investigation. Laboratory analytical results indicated levels of vinyl chloride and

methylene chloride, lead, chromium, copper, cadmium, mercury, arsenic, silver, benzene, trichloroethylene, and t-1,2-dichloroethylene.[3] The depths at which these samples were collected and the exact concentrations of contaminants are unknown, as laboratory analyses from previous soil sampling were not available during review for this report.

AIR PATHWAY

The nearest individuals to the facility are the employees on site. The residential population within 4 miles of the site is 293,537.[10] The population distribution is presented in Table 6.

Table 6
Estimated Population Within Four Miles of
TRW DOT

Radial Distance From the Former TRW DOT Division (miles)	Estimated Population
0.00 to 0.25	1,703
> 0.25 to 0.50	4,325
> 0.50 to 1.00	16,105
> 1.00 to 2.00	69,993
> 2.00 to 3.00	101,530
> 3.00 to 4.00	99,881
TOTAL	293,537

References: [10]

There are no sensitive environments onsite.[1] Wetland acreage within 4 miles of the site was estimated to be approximately 125 acres. [1, 2]

There has been no previous air sampling associated with the site, nor is there any reason to suspect a release into the air pathway. The site is scored on potential target population and sensitive environments due to the presence of VOCs in the groundwater.

SUMMARY

The TRW DOT facility is located at 320 Nevada Street in Newton, Massachusetts. It is part of a larger property designated as 459 Watertown Street at latitude 42°21'33" and longitude 71°12'30". The site consists of a five-story brick mill building, a one-story building and a two-story building surrounded by a paved, landscaped parking lot.

The mill building, 320 Nevada Street, was built in the mid-1860s as the Silver Lake Cordage Company, a rope manufacturer. Silver Lake Cordage Company left the building in 1928 and leased it to United-Carr, Inc. in 1938, who manufactured and electroplated metal fasteners. TRW, Inc. bought United-Carr, Inc. in 1968 and it became the DOT/Fasteners Division of TRW. TRW continued to produce metal fasteners at the site until 1983, when TRW moved the former United-Carr operations and sold the land to Mr. Joseph Biotti. Currently, the site is occupied by four different companies. Dragon Systems, a computer software company, occupies the second through fifth floors of the former mill building and the first floor of the former assembly/warehouse building. Matritech, manufacturers of test kits for cancer diagnostics, occupies the second floor of the former assembly/warehouse building. Politzer and Haney occupies the first floor of the former mill building, also known as the former electroplating room. Amcare Medical Services, Inc., a home health care provider, occupies the former plastic moldings building.

Sources of contamination at the site include cinders/ash in the fill material of the former Silver Lake, drainage manholes in the electroplating room, a cistern located in the mill building, and a bedrock process water well in the plastics moldings building. On October 22, 1984, the sludge/liquid was removed from the drainage manholes in the electroplating room, and the manholes were filled with peastone and sealed. The electroplating room is now occupied by Politzer & Haney. In October 1984, an unknown quantity of sludge was removed from the cistern and the cistern was filled with peastone and sealed. It is unknown whether or not the process water well was sealed. No evidence of the well was noted during the 1997 Stone & Webster site reconnaissance.

Groundwater was sampled at the site in June, 1984. Contaminants detected include the following (maximum concentration detected provided in parentheses): antimony (0.8 mg/L), arsenic (0.055 mg/L), beryllium (<0.1 mg/L), cadmium (9 mg/L), chromium (4.5 mg/L), copper (1.3 mg/L), lead (0.45 mg/L), mercury (0.005 mg/L), nickel (0.5 mg/L), selenium (<0.5 mg/L), silver (0.38 mg/L), thallium (<0.5 mg/L), zinc (23 mg/L), cyanide (0.36 mg/L), chloromethane (<5 µg/L), bromomethane (<5 µg/L), vinyl chloride (<5 µg/L), chloroethane (<5 µg/L), methylene chloride (<5 µg/L), trichloroflouromethane (<5 µg/L), 1,1-dichloroethylene (<5 µg/L), 1,1-dichloroethane (<5 µg/L), t-1,2-dichloroethylene (9 µg/L), chloroform (<5 µg/L), 1,2-dichloroethane (<5 µg/L), 1,1,1-trichloroethane (<5 µg/L), carbon tetrachloride (<5 µg/L), bromodichloromethane (<5 µg/L), 1,2-dichloropropane (<5 µg/L), t-1,3-dichloropropane (20 µg/L), trichloroethylene (69 µg/L), dibromochloromethane (<5 µg/L), cis-1,3-dichloropropane (<5 µg/L), 1,1,2-trichloroethane (<5 µg/L), benzene (7 µg/L), 2-chloroethylvinylether (<5 µg/L), bromoform (<5 µg/L), 1,1,2,2-tetrachloroethylene (<5 µg/L), 1,1,2,2-tetrachloroethane (<5 µg/L), toluene (<5 µg/L), chlorobenzene (<5 µg/L), ethylbenzene (<5 µg/L), D-6 benzene (36 µg/L), and D-8 benzene (25 µg/L).

Soil samples were collected in November, 1982. (Note: The depths at which these samples were collected is unknown.) Contaminants detected include the following: vinyl chloride, methylene chloride, lead, chromium, copper, cadmium, mercury, arsenic, silver, benzene, trichloroethylene, and t-1,2-dichloroethylene. Concentrations of these contaminants are unknown.

Surface water and sediment at the site have not been sampled.

There are no public drinking water wells within 4 miles of the site. The population served by private drinking water wells within 4 miles of the site is approximately 139. The nearest private drinking water well is located between one and two miles from the site.

Surface water could be potentially be impacted via two separate migration routes: overland flow of stormwater runoff or catch basin discharge. A remnant wetland of Silver Lake, located 50 feet to the northwest of the site, is the Probable Point of Entry of the overland flow. The Charles River, located 2,000 feet northwest of the site, is the Probable Point of Entry for the catch basin discharge.

The 15-mile downstream pathway consists of the Charles River for 14 miles and then Boston Inner and Outer Harbor for the remaining 1 mile. There are no drinking water intakes along the 15-mile downstream pathway. It is assumed that the Charles River and the Boston Inner and Outer Harbor are fisheries. There is one wetland located 2.3 miles downstream of the site. It is a 12.8-acre, palustrine, forested island with approximately 500 feet of frontage. There are no threatened or endangered species living within a 4-mile radius of the site or along the Charles River, downstream of the property.

The total number of workers on site is 360. The total population within one mile travel distance of the site is approximately 22,133. The nearest residential property is located 50 feet west of the site. There are no terrestrial sensitive environments on an area of observed contamination.

The residential population within 4 miles of the site is 293,537. There are no sensitive environments within 4 miles of the site. Wetland acreage within 4 miles of the site was estimated to be approximately 125 acres.

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[2] TRC Companies, Inc. Preliminary Assessment - Ucinite Corp./ DOT Corp. March 1993.

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[6] Zecco, Inc. Letter to Joseph Corbo - Matritech re: The Decontamination of Approximately Twenty-two Laboratory Sinks and One Water Neutralization Tank Located at Matritech, 330 Nevada Street, Newton, MA 02160. April 26, 1996.

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[9] National Oceanic and Atmospheric Administration. Local Climatological Data - Annual Summaries for 1991 - Part I Eastern Region. 1991.

[10] Frost Associates. CENTRACTS report for the Former TRW DOT, Newton, MA. May 7, 1997.

[11] Massachusetts Department of Environmental Protection. Massachusetts Public Water Supply Database. June, 1995.

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[13] Stone & Webster Environmental Technology & Services. Telephone Conversation between Lisa White and Watertown Water Department. June 18, 1997.

[14] Stone & Webster Environmental Technology & Services. Telephone Conversation between Lisa White and Waltham Water Department. June 18, 1997.

[15] Stone & Webster Environmental Technology & Services. Telephone Conversation between Lisa White and Belmont Water Department. June 18, 1997.

[16] Stone & Webster Environmental Technology & Services. Telephone Conversation between Lisa White and Frank McLaughlin - Boston Water & Sewer. April 28, 1997.

[17] United States Geologic Survey Web Page. www.usgs.com. 804 National Center, Reston, VA 20192. Last modified July 7, 1997.

[18] Camp Dresser & McKee. Certificate of Laboratory Analysis and Laboratory Analysis to Richard J. Hughto from Alexander W. Schuthesis and Ralph J. Tella. July 27, 1984.

[19] Federal Emergency Management Agency. Flood Insurance Rate Map - City of Newton, MA Middlesex County - Panel 2 of 5. July 17, 1986.

Attachment A
Potential Sources of Contamination Within One Mile of TRW DOT

TYPE	SITE/ID/STATUS	ADDRESS	DIS/DIR
CERCLIS	80/90 Bridge Street Property MAD001071034/Not proposed	80/90 Bridge Street Newton, MA 02158	0.29 NE
CERCLIS	Raytheon Co. Equipment Div. MAD001923408/Not proposed	20 Seyon Street Waltham, MA 02154	0.94 NW
CERCLIS	Watertown Landfill (Former) MAD985300813/Not proposed	Pleasant Street Watertown, MA 02172	0.61 NW
RCRA	AR Equipment Corp. MAD981892896/VGN	70 R Crafts St. Newton, MA 02160	0.32 SE
RCRA	AAMCO Transmissions MAD095862090/VGN	433 Main Street Watertown, MA 02172	0.99 NE
RCRA	Albert Motors, Inc. MAD985290295/SGN	1089 Washington Street Newton, MA 02165	0.91 SW
RCRA	Americold MAD144116340/VGN	555 Pleasant Street Watertown, MA 02172	0.56 NW
RCRA	Andonian Cryogenics, Inc. MAD062162086/VGN	26 Farwell Street Newton, MA 02160	0.77 NW
RCRA	Automec, Inc. MAD057827388/VGN	252 Calvary Street Waltham, MA 02154	0.89 NW
RCRA	BD Auto Electric Co., Inc. MAD062469792/SGN	52 Howard Street Watertown, MA 02172	0.85 NE
RCRA	Bacon Ind., Inc. MAD062169792/SGN	192 Pleasant Street Watertown, MA 02172	0.85 NE
RCRA	Beaconwood Motors, Inc. MAD030821649/VGN	71 Rosedale Road Watertown, MA 02172	0.80 NE
RCRA	Bemis Assoc., Inc. MAD001025865/VGN	294 Pleasant Street Watertown, MA 02172	0.77 NE
RCRA	Boston Scientific Corp. MAD980669469/SGN	480 Pleasant Street Watertown, MA 02172	0.54 NW
RCRA	Boston Scientific Corp. MA5000001008/SGN	5 Bridge Street Watertown, MA 02172	0.53 NE
RCRA	Boston Scientific Corp. MAD985314319/LGN	400 Pleasant Street Watertown, MA 02172	0.61 NE
RCRA	Chrome Plating of Waltham MAD121615496/VGN	265 Pleasant Street Watertown, MA 02172	0.80 NE

RCRA	Clay Chevrolet, Inc. MAD980667877/VGN	444 Watertown Street Newton, MA 02158	0.09 NE
RCRA	Clay Chevrolet, Inc. MAD019524982/VGN	431 Washington Street Newton, MA 02158	0.76 NE
RCRA	Cooperative Garage MAD079526711/VGN	106 Pleasant Street Watertown, MA 02172	0.92 NE
RCRA	D Electro Product Co., Inc. MAD980910731/SGN	60 Farewell Street Waltham, MA 02154	0.81 NW
RCRA	Damco, Inc. MAD045899333/SGN	5 Bridge Street Watertown, MA 02172	0.51 NE
RCRA	Delaney Linen Service, Inc. MAD019685445/VGN	341 Watertown Street Newton, MA 02165	0.30 NE
RCRA	Digital Products, Inc. MAD981061005/VGN	600 Pleasant Street Watertown, MA 02172	0.63 NW
RCRA	Digital Products, Inc. MAD981208820/VGN	32 Bridge Street Watertown, MA 02172	0.61 NE
RCRA	Don's Auto Repair MAD123083974/SGN	279 Pleasant Street Watertown, MA 02172	0.79 NE
RCRA	Exxon Co. USA 35549 MAD985289131/VGN	650 Washington Street Newton, MA 02160	0.49 SE
RCRA	Frost Motors Inc. MAD136229390/SGN	399 Washington Street Newton, MA 02158	0.83 SE
RCRA	Fuji Photo Film USA, Inc. MA5000004150/SGN	320 Washington Street Hotel Newton, MA 02158	0.97 SE
RCRA	G&A Cleansers. Inc. MAD069357861/VGN	475 Main Street Watertown, MA 02172	0.99 NE
RCRA	G&N One Hour Cleaner, Inc. MAD053469367/SGN	321 Washington Street Newton, MA 02158	0.97 SE
RCRA	GM Auto Body Repairs MAD980912976/VGN	64R Crafts Street Newton, MA 02160	0.34 SE
RCRA	Garden City Repairs MAD981896426/VGN	10 Cook Street Newton, MA 02158	0.36 NE
RCRA	Gateway Service Centers MAD981208986/VGN	361 Washington Street Newton, MA 02158	0.90 SE
RCRA	Haartz Mason, Inc. MAD001026285/VGN	270 Pleasant Street Box 322 Watertown, MA 02172	0.79 NE
RCRA	High Tech Turning MAR000006338/SGN	145 California Street Newton, MA 02158	0.87 SE
RCRA	HondaVillage MAD981891468/SGN	371 Washington Street Newton, MA 02158	0.87 SE

RCRA	Hudsha of New England, Inc. MAD985294479/SGN	69 Howard Street Watertown, MA 02172	0.86 NE
RCRA	Lakkis Service Station MAD107904666/VGN	39 Watertown Street Watertown, MA 02172	0.99 NE
RCRA	Lorraine Village Cleaners MAD019528074/VGN	12 Austin Street Newton, MA 02160	0.59 SW
RCRA	MA Com Omni Spectra MAD980914652/LGN	17 Bridge Street Watertown, MA 02172	0.55 NE
RCRA	Microsemi, Inc. MAD001414879/LGN	580 Pleasant Street Watertown, MA 02172	0.61 NW
RCRA	Milwaukee Electric Tool MAD076576396/VGN	143 California Street Newton, MA 02158	0.71 NE
RCRA	Montague Brown Co. MAD058880493/VGN	425R Watertown Street Newton, MA 02158	0.14 NE
RCRA	Mt. Auburn Press, Inc. MAD985301076/SGN	73 Oakland Street Watertown, MA 02172	0.86 NE
RCRA	New England Telephone MAD980907349/VGN	594 Pleasant Street Watertown, MA 02172	0.61 NW
RCRA	City of Newton MAD981896509/SGN	110 Crafts Street Newton, MA 02160	0.24 SE
RCRA	Newtonville Exxon, Inc. MAD050606987/VGN	650 Washington Street Newton, MA 02160	0.49 SE
RCRA	Norcross Corp. MAD001038496/VGN	255 Newtonville Avenue Newton, MA 02158	0.59 SE
RCRA	The Odell Company MAD001018126/SGN	60 Acton Street Watertown, MA 02172	0.85 NE
RCRA	Paolini Corp. MAD019529759/VGN	103R Adams Street Newton, MA 02158	0.17 NE
RCRA	Penta Perfection Auto Body MAD981067945/VGN	483 Pleasant Street Watertown, MA 02172	0.54 NW
RCRA	Rand Typography, Inc. MAD059723486/SGN	30 California Street Watertown, MA 02172	0.97 NE
RCRA	Raytheon Co. MAD001923408/LGN	20 Seyon Street Waltham, MA 02154	0.94 NW
RCRA	Raytheon Co. Research Division MAD000636373/LGN	28 Seyon Street Waltham, MA 02154	0.94 NW
RCRA	Ruland Mfg. Co., Inc. MAD001018274/SGN	380 Pleasant Street Watertown, MA 02172	0.67 NE
RCRA	Silver Lake Truck Maintenance MAD027356633/VGN	99 Adams Street Newton, MA 02158	0.17 NE

RCRA	Sparkle Cleaners MAD066629007/SGN	308 Walnut Street Newton, MA 02160	0.60 SW
RCRA	Summit Sales Co. MAD980914121/VGN	217R California Street Newton, MA 02158	0.60 NE
RCRA	Temptronic Corp. MAD056012420/VGN	55 Chapel Street Newton, MA 02158	0.38 NE
RCRA	Thurstons Auto Service , Inc. MAD094851136/VGN	493 Pleasant Street Watertown, MA 02172	0.54 NW
RCRA	Town & Country Cleaners MAD095856613/VGN	297-299 Watertown Street Newton, MA 02158	0.38 NE
RCRA	Van Keuren Co. MAD001018282/SGN	176 Waltham Street Watertown, MA 02172	0.70 NW
RCRA	Wright Barry Corp. MAD001023704/SGN	700 Pleasant Street Watertown, MA 02172	0.80 NW
SCHOOL	Aquinas Junior College		0.58 SE
SCHOOL	Browne School		0.90 NE
SCHOOL	Cabot School		0.76 SE
SCHOOL	Carr School		0.19 NW
SCHOOL	Day Junior High School		0.40 SW
SCHOOL	Lincoln Eliot School		0.56 NE
SCHOOL	Massachusetts Bay Community College		0.68 NW
SCHOOL	Meadow Brook Junior High School		0.98 SE
SCHOOL	Newton High School		0.82 SW
SCHOOL	Newton Junior College		0.68 SW
SCHOOL	Our Lady School		0.47 SE
SCHOOL	Parker School		0.79 NE
SCHOOL	Stearns School		0.48 NE
SCHOOL	The Fersenden School		0.73 SW

[7]